



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/570,057	12/04/2006	Bernt-Ake Sultan	15691.0001USWO	1873

23552 7590 02/21/2008
MERCHANT & GOULD PC
P.O. BOX 2903
MINNEAPOLIS, MN 55402-0903

EXAMINER

CHOI, LING SIU

ART UNIT	PAPER NUMBER
----------	--------------

1796

MAIL DATE	DELIVERY MODE
-----------	---------------

02/21/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/570,057	Applicant(s) SULTAN ET AL.	
	Examiner Ling-Siu Choi	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>02/28/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action is in response to the Preliminary Amendment filed 02/21/2007. Claims 12-16 were canceled and claims 1-11 are now pending, which are drawn to a pipe.

Claim Rejections - 35 USC § 112

2. **The following is a quotation of the second paragraph of 35 U.S.C. 112:**

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely

Art Unit: 1796

exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 3 recites the broad recitation “the ethylene silane copolymer resin is an ethylene-vinyltriethoxysilane copolymer, an ethylene-gamma-methacryloxytriethoxysilane copolymer, an ethylene-vinyltrimethoxy silane copolymer or an ethylene-gamma-trimethoxysilane copolymer resin”, and the claim also recites “preferably an ethylene-vinyltrimethoxysilane copolymer resin” which is the narrower statement of the range/limitation.

Claim Analysis

4. Summary of Claim 1:

A <u>pipe</u> made of a crosslinkable polyethylene composition containing	
	ethylene silane copolymer resin having a content of silane of about 0.1 to 10 wt % at least one silanol condensation catalyst
wherein the ethylene silane copolymer resin has a density of $> 925 \text{ kg/m}^3$	

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 1796

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Borke et al. (US 2005/0049343 A1) in view of Swarbrick et al. (US 4,117,195).

Borke et al. disclose a crosslinkable, flame retardant polyolefin insulation composition having improved abrasion resistance comprising: (a) 30 to 90 wt% of a high density silane-containing polyethylene base resin selected from the group consisting of: (i) a blend of a bimodal high density polyethylene resin having a density of 0.940 to 0.960 g/cm³ with an ethylene-silane copolymer and, (ii) a bimodal high density polyethylene resin having a density of 0.940 to 0.960 g/cm³ grafted with a silane monomer; (b) 5 to 70 wt% of flame retardant; and (c) 0.01 to 1 wt% of silanol condensation catalyst, wherein the content of silane monomer is in the range of 0.25 to 7.5 wt%, ([0020]; [0024]; claim 1). Since the amount of grafted silane is low, the density of the resulting silane-grafted polyethylene would not be significantly reduced.

The difference between the present claims and the disclosure of Borke et al. is the requirement of a pipe made from the composition.

Swarbrick et al. disclose a cross-linked extruded product obtained by a process comprising: (A) metering into a screw extrusion machine a polyethylene with proportionate amounts of compounding ingredients comprising a hydrolysable unsaturated silane, a free-radical generator, and a silanol condensation catalyst; (B)

Art Unit: 1796

blending the compounding ingredients with the polyethylene in a first zone of the extruder to form a mixture and then heating the mixture in a second zone downstream of the first zone until silane groups have been grafted to the polyethylene, the amount of the free-radical generator being sufficiently low to limit direct free-radical cross-linking to a level that will not prevent extrusion of the material; (C) extruding the mixture directly out of the extruder through an extrusion die to form an elongate product of a required final shape which reads on a pipe; and (D) subjecting the elongate product to the action of moisture until the polymer therein is cross-linked (Example 1; claim 1). In view of the compositions of Borke et al. and Swardbrick et al. being substantial identical, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make a pipe from the composition disclosed by Borke et al. and thereby obtain the present invention.

7. Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Keogh (US 4,707,520 in view of Swarbrick et al. (US 4,117,195).

Keogh discloses a composition comprising (A) a preformed, thermoplastic polymer based on a major proportion of ethylene, the thermoplastic polymer having pendant silane moieties of the formula: $-\text{Si}(\text{V})(\text{V})(\text{OR})$, wherein R is a straight chain C_{4-18} hydrocarbon radical or a branched chain hydrocarbon C_{3-18} radical; each V is a hydrocarbon C_{1-18} radical or an -OR radical; and (B) about 0.1-5 wt% metal carboxylate as a silanol condensation catalyst, wherein the amount of silane is about 0.05-5 wt%

Art Unit: 1796

and the polymer has a density of about 0.92-0.94 g/cm³ (col. 4, lines 36-44; col. 6, line 68; col. 7, lines 1-3; claim 1).

The difference between the present claims and the disclosure of Keogh is the requirement of a pipe made from the composition.

Swarbrick et al. disclose a cross-linked extruded product obtained by a process comprising: (A) metering into a screw extrusion machine a polyethylene with proportionate amounts of compounding ingredients comprising a hydrolysable unsaturated silane, a free-radical generator, and a silanol condensation catalyst; (B) blending the compounding ingredients with the polyethylene in a first zone of the extruder to form a mixture and then heating the mixture in a second zone downstream of the first zone until silane groups have been grafted to the polyethylene, the amount of the free-radical generator being sufficiently low to limit direct free-radical cross-linking to a level that will not prevent extrusion of the material; (C) extruding the mixture directly out of the extruder through an extrusion die to form an elongate product of a required final shape which reads on a pipe; and (D) subjecting the elongate product to the action of moisture until the polymer therein is cross-linked (Example 1; claim 1). In view of the compositions of Borke et al. and Swardbrick et al. being substantial identical, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make a pipe from the composition disclosed by Keogh and thereby obtain the present invention.

Conclusion

Art Unit: 1796

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ling-Siu Choi whose telephone number is 571-272-1098. The examiner can normally be reached on Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on 571-272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ling-Siu Choi/

Primary Examiner, Art Unit 1796

February 15, 2008

Application/Control Number: 10/570,057
Art Unit: 1796

Page 8